CLAIMS:

1. An isolated DNA molecule comprising at least a sequence of 18 contiguous nucleotides selected from the sequence consisting of base pairs 4894-4942 of the sequence in Figure 2 or the corresponding sequence from Figure 5, or a sequence complementary thereto, said DNA molecule also containing non-mammalian DNA sequence and being substantially free of human DNA molecules.

2. An isolated DNA molecule comprising at least a sequence of 18 contiguous nucleotides selected from a sequence which encodes the amino acids from residue 146-163 of the amino acid sequence of pp32r1 or the corresponding sequence of pp32r2.

3. An isolated nucleic acid probe of at least 15 nucleotides which specifically hybridizes on Northern blot with nucleic acid encoding the amino acids from residue 146-163 of the amino acid sequence of pp32r1 or the corresponding sequence of pp32r2.

4. An isolated nucleic acid probe comprising a sequence of at least 8 contiguous nucleotides unique to pp32r1 or pp32r2.

5. A nucleic acid molecule produced by recombinant methods, wherein said nucleic acid molecule encodes at least the amino acids from residue 146-163 of sequence of the amino acid sequence of pp32r1 or the corresponding sequence of pp32r2.

6. The nucleic acid molecule according to claim 5, wherein said nucleic acid molecule is an expression vector which expresses said amino acid sequence.

7. A recombinant cell containing the nucleic acid molecule of claim 6.

8. A nucleic acid molecule produced by recombinant methods, said nucleic acid molecule containing a sequence encoding at least the amino acids from residue 146-163 of sequence of the amino acid sequence of pp32r1 or the corresponding sequence of pp32r2, said sequence being operatively linked to a promoter in antisense orientation.

9. A pair of nucleic acid primers each of which comprises at least 10 contiguous nucleotides, at least one of said primers being selected from or complementary to the sequence of pp32r1, wherein nucleic acid amplification of human chromosome 4 or a transcript thereof using said pair of nucleic acid primers will produce an amplified nucleic acid encoding residues 146-163 of the sequence of pp32r1.

10. A diagnostic method for predicting malignant potential of neuroendocrine, neural, mesenchymal, lymphoid, epithelial or germ cell derived tumors, comprising:

providing a sample of human neuroendocrine, neural, mesenchymal, lymphoid, epithelial or germ cell derived tissue; and

determining, in the sample, levels or intracellular sites of expression of a gene product expressed from a gene sequence which encodes residues 146-163 of the sequence of pp32r1 or the corresponding sequence of pp32r2.

11. A diagnostic method for predicting malignant potential of neuroendocrine, neural, mesenchymal, lymphoid, epithelial or germ cell derived tumors, comprising:

providing a sample of human neuroendocrine, neural, mesenchymal, lymphoid, epithelial or germ cell derived tumor tissue; and

determining, in the sample, levels or intracellular sites of expression of a gene product expressed from a gene sequence which encodes residues 146-163 of the sequence of pp32r1 or the corresponding sequence of pp32r2.

12. The method of claim 11, wherein the gene product is mRNA.

13. The method of claim 12, wherein the mRNA is extracted from the sample and quantitated.

14. The method of claim 12, wherein the level of mRNA is determined by *in situ* hybridization to a section of the tissue sample.

15. The method of claim 12, wherein the mRNA is quantitated by polymerase chain reaction.

16. The method according to claim 11, wherein the gene product is protein.

17. The method according to claim 16, wherein the method further comprises reacting the sample with an antibody that specifically binds to a polypeptide consisting of the sequence of pp32r1, but does not specifically bind to a polypeptide consisting of the sequence of pp32 or pp32r2, or an antibody that specifically binds to a polypeptide consisting of the sequence of pp32r2, but does not specifically bind to a polypeptide consisting of the sequence of pp32 or pp32r1

18. The method according to claim 11, wherein the tissue is a carcinoma.

19. The method according to claim 11, wherein the tissue is a carcinoma or sarcoma of a tissue selected from the group consisting of epithelial, lymphoid, hematopoietic, mesenchymal, central nervous system and peripheral nervous system tissues.

20. The method according to claim 19, wherein the tissue is selected from the group consisting of colon carcinoma, prostate carcinoma and non-Hodgkin's lymphoma.

21. An antibody that specifically binds to a polypeptide consisting of the sequence of pp32r1 or pp32r2, but does not specifically bind to a polypeptide consisting of the sequence of pp32.

22. The antibody of claim 21, wherein the antibody is a monoclonal antibody.

23. An isolated DNA molecule comprising an androgen-activated transcriptional promoter.

24. The isolated DNA molecule of claim 23, wherein the promoter comprises a transcription initiation site and a binding site for a steroid hormone receptor protein positioned within 10,000 nucleotide base pairs (bp) of the transcription initiation site, preferably 5,000 bp, more preferably 3000bp.

25. The isolated DNA molecule of claim 24, further comprising at least one binding site for steroid hormone receptor proteins positioned within 2000 nucleotide base pairs (bp) of the transcription initiation site, preferably a plurality of binding sites for steroid hormone receptor proteins are positioned within 2000 bp of the transcription initiation site, more preferably, at least 5 binding sites for steroid hormone receptor proteins are so positioned.

26. The isolated DNA molecule of claim 25, wherein the binding sites for steroid hormone receptor proteins are selected from the group of steroid receptor protein binding sites listed on Table 1.

27. The isolated DNA molecule of claim 24, further comprising an open reading frame comprising at least one exon of a protein coding sequence, wherein said open reading frame is operatively linked to said androgen-activated transcriptional promoter.

28. The isolated DNA molecule of claim 27, wherein transcriptional activity of the promoter is regulated by steroids.

29. A method of screening a compound for pharmacological activity comprising:

culturing a cell transfected with the DNA molecule of claim 27; and

determining expression of the protein coding sequence in the presence and absence of the compound.

30. The method of claim 29, wherein the expression determined is RNA expression or protein expression.

31. The DNA molecule of claim 23, wherein the DNA molecule is a DNA vector.